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<b>(21) International Application Number:</b> PCT/US97/22125 <b>(22) International Filing Date:</b> 5 December 1997 (05.12.97)  <b>(30) Priority Data:</b> 60/033,251 6 December 1996 (06.12.96) US  <b>(71) Applicant (for all designated States except US):</b> REGENTS OF THE UNIVERSITY OF MINNESOTA [US/US]; Morrill Hall, 100 Church Street, S.E., Minneapolis, MN 55455 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> SCHLIEVERT, Patrick, M. [US/US]; 5305 Birchcrest Drive, Edina, MN 55436 (US). OHLENDORF, Douglas [US/US]; 9397 Olympia Drive, Eden Prairie, MN 55347 (US). MITCHELL, David, T. [US/US]; 4217 Centerville Road, Vadnais Heights, MN 55127 (US). GAHR, Pamala, J. [US/US]; 2728 Horseshoe Lane, Woodbury, MN 55125 (US).  <b>(74) Agent:</b> BRUESS, Steven, C.; Merchant, Gould, Smith, Edell, Welter & Schmidt, P.A., 3100 Norwest Center, 90 South Seventh Street, Minneapolis, MN 55402-4131 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i>
<b>(54) Title:</b> MUTANTS OF STREPTOCOCCAL TOXIN C AND METHODS OF USE  <b>(57) Abstract</b>  This invention is directed to mutant SPE-C toxins or fragments thereof, vaccine and pharmaceutical compositions, and methods of using the vaccine and pharmaceutical compositions. The preferred SPE-C toxin has at least one amino acid change and is substantially non-lethal compared with the wild type SPE-C toxin. The mutant SPE-C toxins can form vaccine compositions useful to protect animals against the biological activities of wild type SPE-C toxin.		

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